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09/29/2004

Arthur I. Watson

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SCHLUMBERGER RESERVOIR COMPLETIONS  
14910 AIRLINE ROAD  
ROSHARON, TX 77583

EXAMINER

FULLER, ROBERT EDWARD

ART UNIT

PAPER NUMBER

3676

NOTIFICATION DATE

DELIVERY MODE

07/10/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/711,631	<b>Applicant(s)</b> WATSON ET AL.	
	<b>Examiner</b> ROBERT E. FULLER	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11,13-20,22-35,39,40,43-45 and 47-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,13-20,22-35,39,40,43-45 and 47-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's submission, filed March 10, 2008, has been fully considered.

Examiner has made modifications to the prior art rejections, some of which were not made because of claim amendments, therefore the examiner has not made this office action final. Examiner has also added rejections under 35 U.S.C. 112, 2nd Paragraph. Finally, examiner has withdrawn the allowability of claim 51, and has set forth a new rejection under 35 U.S.C. 102.

#### ***Claim Rejections - 35 USC § 112***

2. Claims 39 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: An element capable of producing fluid from a well (with respect to claim 39), and an element capable of pumping fluid from a well (with respect to claim 51).

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 16-19, 22, 25-28, and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Shaw et al. (US 4,667,737).

With regard to claim 16, Shaw discloses forming a motive unit by connecting a motor section shaft (1d) to a protector section shaft (5) to form an axially affixed connection (wherein the axis is transverse to the longitudinal axis of the motive unit); placing a sealed housing (20) about the axially affixed connection to form a combined motor section and protector section, prefilling the combined motor section and protector section with a lubricating fluid prior to delivery of the combined motor section and protector section to a wellbore location (where the wellbore location is a downhole location—see column 2, lines 3-7), and forming a protector section head (40) with lateral sand escape holes (41) disposed above a protector section bearing (48).

With regard to claim 17, Shaw discloses placing the motive unit downhole.

With regard to claim 18, the motor shaft and protector shaft are connected when the housings are connected via threaded couplers (1c).

With regard to claim 19, Shaw discloses threadably engaging the motor protector housing with the motor housing (via threaded bolts 1c).

With regard to claim 22, Shaw discloses replaceable wear sleeves (26, 48).

With regard to claim 25, Shaw discloses forming oil communication holes (25d, 30h) at an angle with respect to an axis of the combined motor section and protector section.

With regard to claim 26, Shaw teaches a method for protecting a submersible motor, comprising: constructing a motive unit having a longitudinal axis for a

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submersible pumping system with a motor section (1) and a protector section (10) combined; delivering the motive unit to an oil production well as a single unit; and providing the motive unit with a plurality of oil communication holes (30h, 25d) deployed at an a nonzero angle with respect to the longitudinal axis such that the nonzero angle of the plurality of oil communication holes corresponds with an angle at which the motive unit is positioned relative to vertical during filling of the motive unit with oil.

With regard to claim 27, Shaw teaches prefilling the motive unit with a lubricating oil prior to delivering the motive unit to the production well (the motive unit is filled with oil prior to being placed in the well).

With regard to claim 28, Shaw teaches axially connecting a motor section shaft with a protector section shaft.

With regard to claim 30, Shaw discloses permanently connecting the shafts using a coupling sleeve (2).

With regard to claim 31, Shaw provides a sand escape hole (41) in the protector head.

With regard to claim 32, Shaw discloses journal bearings having replaceable wear sleeves (26, 48).

5. Claims 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Shilman (RU 2162272 C1).

With regard to claim 39, Shilman discloses a system for producing fluid, comprising a motor section (1) having an electrical cable connection (5) having a spring biased terminal block (8, 9, 13, 14, 16). The terminal block is biased towards a sealed

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position, so that fluid communication is allowed when the plug is inserted, and not allowed when the plug is not inserted (see page 4 of the translation, paragraph 3).

Shilman also discloses dielectric gaskets (11, 12, 13), as "dielectric" simply means "nonconducting," and Shilman states that his gaskets are "rubber," and therefore nonconducting.

With regard to claim 40, Shilman discloses a protector section (3) permanently coupled to the motor section.

6. Claims 47-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Du et al. (US 2005/0087343).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With regard to claim 51, Du discloses a system for use in pumping a fluid from well, comprising: an electric submersible pumping system (10) having a motor section (14) and a protector section (16), wherein at least one of the motor section and the protector section comprises a bubble sump (88) to maintain any released gases in a dedicated volume, further comprising a relief valve system (94) in communication with the dedicated volume to vent gas from the bubble sump (see paragraph 0030).

With regard to claim 47, Du is silent as to how the protector and motor unit are manufactured. However, Figure 1 shows the motor and protector as a single unit. MPEP 2113 Product-by-Process Claims states that "If the product in the product-by-process claim is that same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process." In other words, Du shows the motor and protector as a single unit, therefore, it does not matter whether the motor and protector were assembled at a manufacturing plant or afterward, at a well site prior to insertion into a well. The process by which the combined motor and protector is made is not a patentable distinction. Furthermore, examiner considers "manufacturing" to encompass both assembly at a factory and assembly at a well site prior to insertion downhole. "Manufacturing" does not necessarily mean only that which occurs at a manufacturing plant.

With regard to claim 48, the bubble sump (88) is disposed in the protector section (16).

With regard to claim 49, the bubble sump comprises a framework (38, 40) having the dedicated volume.

With regard to claim 50, portions of the framework are above protector bags (48).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 1, 3-5, 7, 8, 15, 23, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. (US 4,667,737) in view of Scarsdale (US 6,290,430).

With regard to claims 1, 23, and 33, Shaw discloses a system for producing oil, comprising a submersible pump (not shown, but connectable to end of shaft at 5b - see column 3, lines 19-20), and a motive unit to power the submersible pump, the motive unit being a single device with a motor section (1) and motor protector section (10) to seal the motor section from surrounding fluid and to accommodate thermal expansion of an internal lubricating fluid during production of oil, wherein the motive unit comprises a plurality of bearings (26, 48), wherein the motor section comprises a motor section shaft (1d) and the motor protector section comprises a motor protector section shaft (5), the motor section shaft and the motor protector section shaft being axially affixed to each other with respect to the longitudinal axis of the motive unit.

Shaw fails to disclose the plurality of bearings having self-lubricating bushings.

Scarsdale discloses a submersible motor apparatus (42) for producing fluid from a well, comprising self-lubricating bushings (70).



It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the bushings of Shaw to be the self-lubricating type disclosed by Scarsdale, as Scarsdale states that “self-lubricating bearings promote the longevity of electric submersible pumping systems” (see column 4, lines 64-66).

With regard to claims 3-5, Shaw discloses a splined connection between the motor section shaft and the motor protector section shaft, but fails to disclose a threaded or cross bolt connection.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided a threaded connection, cross-bolt connection, or interference fit connection in place of the splined connection disclosed by Shaw, as examiner hereby takes Official Notice that any of these equivalent connections would have been equally effective at affixing the two shafts with respect to an axis transverse to the longitudinal axis of the motive unit, and further because applicant has provided no criticality for the selection of one type of connection over the other, as evidenced by the fact that applicant has claimed all three types of connections. *See column 6, lines 39-44, of Yorulmazoglu (US 6,398,521) for supporting evidence. Yorulmazoglu discloses a submersible pump assembly where “splines may be substituted with various shaft coupling structures including a key-way, interference fit, threaded connector, welding, cross-bolts, pins, hex-shaped bodies, etc.”*

With regard to claim 7, Shaw discloses a protector section head (40) with lateral sand escape holes (41) disposed above a protector section bearing (48).

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With regard to claim 8, Shaw discloses a shroud (50) protecting a bearing (42).

With regard to claim 15, Shaw discloses a plurality of oil communication holes (25d, 30h) deployed at an angle with respect to the longitudinal axis of the motive unit.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Scarsdale as applied to claim 1 above, and further in view of Shilman (RU 2162272 C1).

Shaw in view of Scarsdale discloses an electric submersible motor (14), but fails to disclose the motor comprising a spring biased terminal block.

Shilman discloses an electrical connection having a spring biased terminal block (8, 9, 13, 14, 16). The terminal block is biased towards a sealed position, so that fluid communication is allowed when the plug is inserted, and not allowed when the plug is not inserted (see page 4 of the translation, paragraph 3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the motor of Shaw in view of Scarsdale with the connection module of Shilman, as Shilman's module would have "ensure[d] equalization of pressure in the cavity with that of the liquid within the well. As a result, the cable entry [would not have been] exposed to differential pressure – a factor that [would have ensured] its reliable sealing and long-term serviceability."

10. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Scarsdale as applied to claim 1 above, and further in view of Kinsinger (US 6,091,175).

With regard to claims 9 and 10, Shaw discloses conventional journal bearings (42, 48, 26, etc.) having replaceable wear sleeves. However, Shaw does not disclose a dual-sleeve setup, in which an inner sleeve is attached to and rotates with the shaft, and an outer sleeve is attached to the housing.

Kinsinger discloses a bearing assembly for a submersible pump motor comprising a journal bearing having a replaceable wear sleeve (48), which is non-rotatably connected to the shaft (26) via a key (see column 4, lines 30-34), and is made of a soft metal such as bronze or brass (see column 4, lines 56-57). Therefore, though not explicitly stated, the wear sleeves of Kinsinger appear to be designed to bear the brunt of the wear due to friction as they are made of a soft metal.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the bearings of Shaw in view of Scarsdale with a dual-sleeve setup as disclosed by Kinsinger, in order to have absorbed the friction caused by rotation of the shaft, thereby preventing undue wear to the shaft and housing.

With regard to claim 11, Shaw in view of Scarsdale, further in view of Kinsinger simply discloses wear sleeves which are keyed to the shaft, but does not disclose the sleeves being press fit onto the shaft with a tolerance ring.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used a press fit and tolerance ring connection between the shaft and sleeve rather than the keyed connection taught by Kinsinger, as examiner hereby takes Official Notice of the equivalency of these connections, and

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furthermore because applicant has not provided any criticality for the choice of one connection over the other, as evidenced by the fact that applicant has claimed both types of connections. *See the rejection of claims 43-45 below, and the Yamamoto et al. (US 6,854,556) and Kurokawa et al. (US 6,394,220) references, which provide evidence of the equivalence of these types of connections.*

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw in view of Scarsdale as applied to claim 1 above, and further in view of Vandevier (US 4,521,708).

Shaw in view of Scarsdale fails to disclose the bearings being rotor bearings with spring-loaded keys.

Vandevier discloses a submersible motor comprising rotor bearings (37) having spring-loaded keys (51).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the bearings of Shaw in view of Scarsdale with spring-loaded keys as disclosed by Vandevier, in order to have provided "a positive means for the bearing to engage the stator to prevent rotation" (see column 3, lines 63-65), thereby reducing "heat and metal surfaces galling which ultimately leads to oil contamination and dielectric breakdown" (see column 1, lines 44-46). The spring-loaded keys would have also allowed "easy insertion of the rotor into the stator" (see column 3, lines 67-68), thereby reducing assembly time.

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12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Scarsdale as applied to claim 1 above, and further in view of Howell et al. (US 6,602,059).

Shaw in view of Scarsdale fails to disclose placing a sensor within the motor section.

Howell discloses a submersible motor and protector assembly having a sensor (30) within the motor (18).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have included a sensor within the motor of Shaw, as Howell teaches that “one skilled in the art [would have understood] that it can be advantageous to attach an optional sensor to the motor” (column 2, lines 33-36) in order to have enabled an operator at the surface to monitor downhole conditions.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Shilman.

Shaw discloses an electric submersible motor (14), but fails to disclose the motor comprising a spring biased terminal block.

Shilman discloses an electrical connection having a spring biased terminal block (8, 9, 13, 14, 16). The terminal block is biased towards a sealed position, so that fluid communication is allowed when the plug is inserted, and not allowed when the plug is not inserted (see page 4 of the translation, paragraph 3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the motor of Shaw in view of McAnally

with the connection module of Shilman, as Shilman's module would have "ensure[d] equalization of pressure in the cavity with that of the liquid within the well. As a result, the cable entry [would not have been] exposed to differential pressure – a factor that [would have ensured] its reliable sealing and long-term serviceability."

14. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. (US 4,667,737).

Shaw discloses two shafts connected by a sleeve, but fails to disclose providing a single, unitary shaft.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided a single, unitary shaft instead of the jointed shaft disclosed by Shaw, in order to have provided for a stronger driveshaft and furthermore because it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

15. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Vandevier (US 4,521,708).

Shaw discloses standard single-sleeve journal bearings, but fails to disclose the bearings being rotor bearings with spring-loaded keys.

Vandevier discloses a submersible motor comprising rotor bearings (37) having spring-loaded keys (51).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the bearings of Shaw with spring-loaded

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keys as disclosed by Vandevier, in order to have provided "a positive means for the bearing to engage the stator to prevent rotation" (see column 3, lines 63-65), thereby reducing "heat and metal surfaces galling which ultimately leads to oil contamination and dielectric breakdown" (see column 1, lines 44-46). The spring-loaded keys would have also allowed "easy insertion of the rotor into the stator" (see column 3, lines 67-68), thereby reducing assembly time.

Claims 24 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. in view of Howell et al. (US 6,602,059).

Shaw fails to disclose placing a sensor within the motor section.

Howell discloses a submersible motor and protector assembly having a sensor (30) within the motor (18).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have included a sensor within the motor of Shaw, as Howell teaches that "one skilled in the art [would have understood] that it can be advantageous to attach an optional sensor to the motor" (column 2, lines 33-36) in order to have enabled an operator at the surface to monitor downhole conditions.

16. Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsinger in view of Yamamoto et al. (US 6,854,556) and Kurokawa et al. (US 6,394,220).

With regard to claim 43, Kinsinger discloses a system for producing a fluid, comprising: a motive unit (8) for driving a submersible pump, the motive unit having a journal bearing (see Figure 3) disposed about a drive shaft (26), wherein the journal

bearing has a replaceable sleeve (48), wherein the replaceable sleeve is keyed to the shaft. Kinsinger fails to disclose the sleeve being press fit onto the shaft with a tolerance ring.

Yamamoto discloses a sleeve (10) press fit onto a shaft (3c) with a tolerance ring (51--see column 11, lines 50-65, of the '556 patent).

Kurokawa teaches that the sleeve (11) of Yamamoto can be press fit or keyed onto the shaft (3c) of Yamamoto (see column 3, lines 44-46 of the '220 patent). Examiner notes that Yamamoto and Kurokawa are commonly owned patents with very similar figures, therefore the shaft and sleeve are the same in both patents.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have substituted a press-fit connection with a tolerance ring as taught by Yamamoto for the keyed connection taught by Kinsinger, since Kurokawa teaches the functional equivalence of press-fit and keyed connections, and therefore the simple substitution of one equivalent connection type for another would have yielded predictable results.

With regard to claim 44, Kinsinger discloses a plurality of journal bearings that each have a replaceable wear sleeve (see Figure 2).

With regard to claim 45, Kinsinger discloses a motor section (12) and a protector section (10) assembled as a single unit.

### ***Response to Arguments***

17. Applicant's arguments filed March 10, 2008 have been fully considered but they are not persuasive. Applicant has argued the following points:



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1. Merrill does not disclose delivering the motive unit to an oil production well as a single unit.
2. Shilman does not disclose a terminal block movable between a sealed position and an open position.
3. Shaw in view of McAnally fails to disclose motor and protector shafts that are axially affixed with respect to the longitudinal axis of the housing.
4. Shaw fails to disclose sand escape holes.

Examiner respectfully traverses each of applicant's arguments as follows:

1. Examiner respectfully asserts that Merrill does teach delivering the unit to an oil production well as a single unit, since the apparatus is certainly not assembled downhole. Delivering the unit downhole as a single unit satisfies the limitation of delivering the unit "to a production well" as a single unit.
2. Shilman discloses a terminal block which consists of multiple parts (8, 9, 13, 14, 16). While examiner acknowledges that the *entire* terminal block is not spring biased, at least one part of the terminal block is, i.e. valve 13. The claim does not specify that the entire terminal block is movable and spring biased.

Therefore, Shilman still reads on this claim.

3. Shaw discloses a motor and protector shaft which are connected by splines. Because the motor housing and protector housing are connected, then the shafts are effectively axially affixed. The shafts cannot be pulled apart because the housing of the motor and protector are connected. Furthermore, axially affixing the shafts is obvious anyway, as a spline connection is equivalent to the claimed

cross-bolt, threaded, or interference connections (see the rejection of claims 3-5 above).

4. Shaw does disclose sand escape holes. "Sand escape holes" merely means that sand could escape from the holes. The claim does not state with any specificity *where* the sand is escaping from. Shaw's passages see well fluid, which contains sand, and therefore sand is constantly passing through the passages, both entering and leaving the interior of the housing. Examiner notes that simply from a comparison of drawings, Shaw's passages (41) look very similar to the sand escape holes (120) in Figure 7 of the instant application. So similar, in fact, that examiner sees no reason that Shaw's ports could be considered sand escape holes.

### ***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. FULLER whose telephone number is (571)272-0419. The examiner can normally be reached on Monday thru Friday from 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Supervisory Patent Examiner,  
Art Unit 3676

07/02/2008  
REF